Principles and Practice of Sustainability Education in Schools

Jaimie P. Cloud
President
Sustainability Education Center Inc.
www.sustainabilityed.org

Sustainability Education Center, Inc.
307 Seventh Avenue, Suite 1201
New York, NY 10001
(212) 645-9930 voice (212) 645-9931 fax

How Can We Educate for a Sustainable Future?

Our Students

- **What would students know, be able to do, and be like if they were educated for a sustainable future?**
  - What habits of mind would they demonstrate?
  - What behaviors would be evident?

Our Schools

- **What are our schools already doing?**
- **What do our schools need to do differently?**

A Brief History

- **Environmental Education**
  - 1962 *Silent Spring*
  - 1970 Earth Day
  - 1978 UNESCO Tbilisi Declaration
  - 1990 Environmental Education Act
- **Global Education**
  - 1968 Global Education emerges as a field of inquiry
- **Sustainability**
  - 1987 *Our Common Future* (Brundtland Report)
  - 1992 Earth Summit/Agenda 21 (Rio de Janeiro)

A Brief History (cont'd)

- **Sustainability Education**
  - 1992 Chapter 36 of Agenda 21
  - 1993 President's Council for Sustainable Development (PCSD)
    - Task Force/Policy Framework, *From the Classroom to Community and Beyond: Educating for a Sustainable Future*
  - 1994 PCSD and the National Science and Technology Council (NSTC) formed the National Forum on Partnerships for Supporting Education about the Environment
  - 1995 Sustainability Education Center
  - 1996 National Forum writes blueprint entitled, *Education for Sustainability: Agenda for Action*

What are Schools Already Doing?

- **State Content and Performance Standards**
- **Pedagogy**
  - Brain Research
  - Multiple Intelligences
  - Learning Styles
  - Constructivist approaches to learning
  - Student-centered learning

What Schools are Doing (cont'd)

- **Thinking Skills and Methodologies**
  - Creative problem solving
  - Cooperative learning
  - Inquiry-based learning
  - Critical thinking and analysis

- **Community as a Resource**
  - Service learning
  - Project-based learning
  - Place-based learning
  - Authentic Instruction and Assessment

Selected Fields of Study that Contribute to Education for Sustainability

- **Environmental**
  - Environmental Education
  - Science Education (Physics, Biology, Earth Science…)
- **Economic**
  - Sustainable Economics

Fields (cont'd)

- **Social**
  - Global Education
  - Ecological Design and Architecture Education
  - Holistic Education
  - Future Studies
  - Organizational Learning and Change
  - Environmental Ethics and Philosophy
  - Ecological Psychology
  - Conflict Resolution Education
  - System Dynamics Education

Core Content

- Ecological Literacy
- System Dynamics and “Systems Thinking”
- Multiple Perspectives
- Place
- Sustainable Economics
- Citizenship (Participation and Leadership)
- Creativity and Visioning

Habits of Mind

- Understanding of Systems as the Context for Decision Making
- Intergenerational Responsibility
- Mindful of and Skillful with Implications and Consequences
- Protecting and Enhancing the Commons
- Awareness of Driving Forces and their Impacts
- Assumption of Strategic Responsibility
- Paradigm Shifter

Understanding of Systems as the Context for Decision Making

The extent to which one sees both the whole system and its parts as well as the extent to which an individual can place one's self within the system

Intergenerational Responsibility

The extent to which one takes responsibility for the effect (s) of her/his actions on future generations

Mindful of and Skillful with Implications and Consequences

The extent to which one consciously makes choices and plans actions to achieve positive systemic impact

Protecting and Enhancing the Commons

The extent to which one works to reconcile the conflicts between individual rights and the responsibilities of citizenship to tend the commons

Awareness of Driving Forces and their Impacts

The extent to which one recognizes and can act strategically and responsibly in the context of the driving forces that influence our lives

Assumption of Strategic Responsibility

The extent to which one assumes responsibility for one's self and others by designing, planning and acting with whole systems in mind

Paradigm shifter

The extent to which one recognizes mental models and paradigms as guiding constructs that change over time with new knowledge and applied insight

Players in the Last 10 Years

A few examples…

- K-12
- Higher Education
- Public
- Government

K-12

- Sustainability Education Center
- Foundation for our Future (formerly called, Center for a Sustainable Future)
- Northwest Environment Watch
- New Jersey's Sustainable School's Network
- Vermont Department of Education
- Creative Change Educational Solutions
- Creative Learning Exchange
- National Science Teachers Association
- Lawrence Hall of Science, University of California, Berkeley

Higher Education

- University Leaders for a Sustainable Future
- Higher Education Network for Sustainability Education
- Second Nature
- International Society for Ecological Economics

Public

- Redefining Progress
- World Resources Institute (WRI)
- Sustainable Communities Network
- Union of Concerned Scientists
- National Council for Science and the Environment (NCSE)

Government

- White House Office on Education for Sustainability (*dissolved*)
- EPA Office of Sustainable Ecosystems and Communities (*dissolved*)
- NOAA – Office of Education for Sustainability

What are the players doing?

- Curriculum and Instruction
  - Units of Study
  - Full Courses
  - Assessment Tools
  - Professional Development
  - Leadership Training
- Physical Plant
- Youth Programs
- Relationship to Communities
- Procurement
- Investments (Higher Education)
- Research and Development

What part does the Sustainability Education Center play?

- Professional Development of Teachers
- Leadership Training of Administrators
- Curriculum Development
  - Units of Study
  - Fully Courses of Study
  - Assessment Tools
- Capacity Building
- Research and Assessment

Sustainability Education Center's Current Initiatives

- *Business and Entrepreneurship Education for the 21st Century* (BEE 21)
  - Essential Question: What is Success?
  - Document Based Question (DBQ): Does the modern world require a new economic model and new business practices for success in the 21st Century?

Initiatives (cont'd)

- *Inventing the Future: Leadership and Participation for the 21st Century* (IF)
  - Essential Question: What kind of future will we invent?
  - Document Based Question (DBQ): What criteria would you use to reconcile conflicts that exist between individual rights and our responsibilities as citizens?

Initiatives (cont'd)

- Linking math and science instruction in Middle Schools to the Physical Plant
- Going to Scale through strategic partnerships
- *Inventing the Future, Focus on China*

Initiatives (cont'd)

- **External**
  - UN Decade (IUCN/CSD)
  - National Association of Independent Schools (NAIS)
  - Environmental Education Coalition (EEC)
  - North American Association for Environmental Education (NAAEE)

Our Impact on Teachers

Since 1995, we have **educated approximately 12,000 educators** for sustainability in the US

Selected Teacher Learning Outcomes

- Teachers will experience changes in knowledge and attitudes about sustainability
- Teachers will experience changes in teaching practices
- Teachers will experience changes in behaviors related to consumption patterns, materials cycling, and political involvement

Our Impact on Students

Since 1995, we have **educated approximately 1.8 million students** for sustainability in the US

Selected Student Learning Outcomes – BEE 21

- Students will understand the concept of sustainability and its application in business practices.
- Students will understand and apply systems thinking into business plans.
- Students will recognize the moral and ethical, social, and ecological reasons for sustainable business practices.

Selected Student Learning Outcomes - IF

- Students will develop the ability to think critically and systematically in addressing the root causes of local and global issues.
- Students will learn to think creatively in terms of problem solving and decision making so that they can move both themselves and their communities towards a sustainable future.
- Students will demonstrate collective respect for the self and the commons.
- Students will develop an awareness of human choices and their consequences, and illustrate an understanding of the importance of cooperation, teamwork and consensus building in addressing regional and global challenges.

Recommendations

- Funding
- Teacher Education, Pre-Service and In-Service
- Standards and Assessment
- Community Education, School/Community/Industry Partnerships
- Curriculum and Assessment Development and Distribution
- National Agenda for Sustainability Education